

REMARKS

Rejection of Claims under 35 U.S.C. § 112 – Written Description

In the Office Action of June 5, 2006, the Examiner has rejected claims 56-70 under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. In particular, the Examiner states, “[t]he claims contains (sic) subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.” Applicants respectfully disagree. Applicants submit that persons of ordinary skill in the art, who have read Applicants’ specification, would clearly recognize that the Applicants in fact invented what is claimed.

First, Applicants point out that the subject matter of the claims need not be described literally (i.e., using the same terms or in *haec verba*) in order for the disclosure to satisfy the description requirement. That is, the claim language need not be identical to the language in the specification providing support for the claim. For example, in the case of claim 56, the claim refers to first and second “flow limiting conductances.” The Examiner suggests that he cannot determine an equivalent for a “flow limiting conductance”, but then goes on to identify several equivalents in asking, “[c]an a flow limiting conductance be a valve, a diffuser, a restrictor, a flow meter, or any other multitude of flow controlling elements?” The answer is yes.

After reading Applicants’ specification, one skilled in the art will appreciate and understand that in the context of the claimed invention (e.g., claim 56), a flow limiting conductance can be a component, or combination of components, controlling a gas flow between a source and an entrance to a reactor. The concept of a flow limiting conductance is described in various places in the specification. For example, paragraph [0036] states:

Various “restrictors” and conduit conductance limitations as may be useful may be placed in the gas switching manifold 102 (e.g., in reactor purge pathways 126 and 124), but are not shown in detail. Where used such

restrictors and conductances may also determine the quantitative pressure and flow values.

Accordingly, it is clear from the specification that a “conductance” is a component used to control flow. Applicants submit that one skilled in the art would not be making much of a mental leap in determining that a “flow limiting conductance” (as the term is used in claim 56) is a conductance that determines or controls a flow value of a gas flow.

In addition, paragraph [0048] states:

In a second method, the purge flow is controlled by switching upstream, flow limiting conductances (e.g., from a low to a high value for low and high flow, respectively) in time-phase with downstream conductances (e.g., from a low to a high level for low and high flow, respectively). This method is referred to herein as "tracking conductance(s)" in the system. This approach provides not only the ability to keep the pressure of the reactor nominally constant (as long as the fraction of upstream and downstream conductances are the same at any point in time during the switching cycle), but also allows for a wide dynamic range of purge flows. The upstream switching conductances may be placed in a variety of configurations: for example, in series with or imbedded within a split-flow chemical manifold, or in parallel with the chemical delivery manifold lines. The downstream switching conductances may also be placed in a variety of positions: for example, in the locale of the first downstream constriction just downstream from the reaction zone, or integrated as part of the downstream throttle valve (which in this case is controlled independently so as to assume designed positions or openings and is not used in a closed loop control mode).

Paragraph [0048] not only provides support for the claimed invention – particularly the concept of a flow limiting conductance – but it also suggests several components (e.g., throttle valve or switching valve) and configurations that may be used as flow limiting conductances.

In one last example, paragraph [0051] of the specification states in connection with the description of FIG. 4:

Given the current state of the art, the pressure controllers 409 and 411 cannot be fast gas switched below several hundred milliseconds (however, future pressure controllers may allow for direct, fast electronic control). We avoid this

shortcoming by passing the pressurized gas through fast switching pneumatic valves (with conductances determined by the conduit lines, elbows, valve and any restrictor components in the lines between the pressure sources 409/411 down to and including the entrance 428 to the reactor 410).

Accordingly, one skilled in the art will appreciate and understand that in the context of the claimed invention, a flow limiting conductance is a component, or combination of components, controlling a gas flow between a source and an entrance to a reactor.

Furthermore, one skilled in the art will appreciate and understand that, in the context of various different embodiments of the invention, a flow limiting conductance may be different components, or combination of components. In any case, Applicants submit that the specification provides support for the claims as filed.

Rejection of Claim 58 under 35 U.S.C. § 112 – Enablement

The Examiner has rejected claim 58 under 35 U.S.C. § 112, first paragraph for failing to comply with the enablement requirement. In particular, the Examiner states, “Applicant’s (sic) specification is devoid of an enabling disclosure for a ‘plasma-assisted process.’” Applicants respectfully disagree. Applicants submit that persons of ordinary skill in the art, who have read Applicants’ specification (paragraph 83 in particular), would understand how the claimed invention pertains to plasma-assisted processes.

Objection to the Drawings under 37 CFR 1.83(a)

In the Office Action of June 5, 2006, the Examiner objected to the drawings under 37 CFR 1.83(a). In the Office Action, the Examiner enumerated several elements that the Examiner alleges are not “detailed in either the specification as filed and amended ... and not detailed in the drawings.” Consequently, the Examiner suggests that he “cannot determine equivalents in the prior art.” Applicants respectfully disagree.

Again, the Examiner is reminded that the claim language need not be identical to the language used in the specification as used to describe the drawings. Despite stating that he cannot determine equivalents to such claimed elements as a “flow limiting conductance”, in the Office Action the Examiner provides a list of no less than four potential equivalents (e.g., a valve, a diffuser, a restrictor, a flow meter) for a flow

limiting conductance. Applicants submit that, to the extent a claimed element is essential to a proper understanding of the invention, the element is illustrated in the drawings.

Take for example independent claim 56 and FIG. 4. The Examiner has suggested that “first pressure source” and “second pressure source” are claimed elements (from claim 56) that are not detailed in the specification and drawings. Applicant’s submit that one skilled in the art will appreciate and understand that the boxes in FIG. 4 with reference numbers 409 and 411, which are referred to in the specification as representing pressure controllers, are first and second “pressure sources” for purposes of illustrating claim 56. Similarly, Applicants submit that one skilled in the art will understand and appreciate that the claimed elements “first gas flow pathway” and “second gas flow pathway” are conventional elements represented in the drawings by simple lines showing the directional flow of a gas (e.g., lines with reference numbers 124 and 126 in FIG. 1, and 424 and 426 in FIG. 4).

Reconsideration of this application is respectfully requested. If there are any additional fees associated with this communication, please charge Deposit Account No. 19-3140.

Respectfully submitted,

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